

IN THE CLAIMS:

1.(currently amended) A power assisted drill press comprising:

a drill motor having an actuation switch and a bit, said drill motor mounted with a motor frame; and

a press frame having a frame support having a first and a second end and a frame base nearest said second end, said motor frame movably mounted with said press frame and placed nearest said first end whereby said bit is opposite yet substantially pointing toward a plane of said second end; and

a gap between said bit and said frame base, said gap allowing a work material to be substantially placed; and

a pneumatic feed cylinder substantially mounted with said press frame, said pneumatic feed cylinder having a moving shaft contacting said drill motor or motor frame and a pneumatic input port whereby a pneumatic pressure into said input port creates a force onto said shaft and thereby promotes movement of said shaft and said drill motor; and

an pneumatic variable pressure regulator substantially mounted with said motor or motor frame having an output port connected with said input port of said feed cylinder and an activating lever having a displacement, said regulator supplying said pneumatic pressure from said output port in a pressure value relative to said activating lever displacement and substantially venting said pneumatic pressure when said lever is not displaced,

whereby said work material and said bit approach and substantially contact when said moving shaft extends due to said pneumatic pressure provided to said feed cylinder and said feed cylinder provides a force between said bit and said work material substantially proportional to said activating lever displacement.

2.(Original) The power assisted drill press as set forth in claim 1 further comprising:

a top plate mounted with said frame support and having one or more guide holes and said feed cylinder attached; and

one or more guide rods each having a first end and a second end and slidably engaged through said guide holes; and

a motor plate mounted with said motor frame and having said first end of said guide rods

attached and positioned to allow extension of said moving shaft of said feed cylinder to cause said motor frame, said motor plate, and said one or more guide rods to move.

3.(Cancelled)

4.(Original) The power assisted drill press as set forth in claim 2 whereby:
said frame base comprises a base plate having a through hole of substantially the same size
as said frame support; and
said base plate slidably fastened with said frame support with said through hole.

5.(Cancelled)

6.(Original) The power assisted drill press as set forth in claim 2 further comprising:
a suction cup having a cup cavity and mounted near said second end of said frame support.

7.(Original) The power assisted drill press as set forth in claim 6 further comprising:
a venturi capable of created a vacuum, said vacuum of said venturi connected with said cup
cavity of said suction cup whereby when said venturi is activated a vacuum is drawn within said cup
cavity, thereby allowing said press frame to suctionally attach to a surface.

8.(Original) The power assisted drill press as set forth in claim 4 further comprising:
a suction cup having a cup cavity and mounted near said second end of said frame support;
and
a venturi capable of created a vacuum, said vacuum of said venturi connected with said cup
cavity of said suction cup whereby when said venturi is activated a vacuum is drawn within said cup
cavity, thereby allowing said press frame to suctionally attach to a surface; and
said base plate further comprising a base plate support substantially opposite from said frame
support and rotated away from said bit, said base plate support capable of stabilizing said press frame
when said bit approaches said work material.

9.(Cancelled)

10.(Currently amended) The power assisted drill press as set forth in claim 2 further comprising:

one or more springs placed upon said one or more guide rods between said second ends of said guide rods and said top plate; and

one or more keepers near said second ends of said guide rods whereby said springs are contained between said keepers and said top plate and serve to supply retraction force to said motor frame when said feed cylinder is not actuated.

11.(Currently amended) The power assisted drill press as set forth in claim 6 further comprising:

one or more springs placed upon said one or more guide rods between said second ends of said guide rods and said top plate; and

one or more keepers near said second ends of said guide rods whereby said springs are contained between said keepers and said top plate and serve to supply retraction force to said motor frame when said feed cylinder is not actuated.

12.(Currently amended) The power assisted drill press as set forth in claim 7 further comprising:

a mating plate within said cup cavity yet positioned to not extend beyond a surface represented by a circumference of said suction cup, said mating plate having a mating surface capable of substantially conforming to the surface of said work material whereby said mating plate is capable of stabilizing said press frame when said press frame to suctionally attaches to said surface.

13.(Currently amended) The power assisted drill press as set forth in claim 8 further comprising:

a mating plate within said cup cavity yet positioned to not extend beyond a surface represented by a circumference of said suction cup, said mating plate having a mating surface capable of substantially conforming to the surface of said work material whereby said mating plate is capable of stabilizing said press frame when said press frame to suctionally attaches to said surface.

14.(Original) The power assisted drill press as set forth in claim 1 whereby:

said drill motor is a pneumatic drill motor.

15.(Original) The power assisted drill press as set forth in claim 1 whereby:

 said actuation switch of said drill motor and said activating lever of said regulator are positioned to allow a user to utilize an index finger to actuate said drill motor switch while simultaneously utilizing a thumb to actuate said activating lever of said regulator.

16.(Currently amended) A power assisted drill press comprising:

 a press frame having a frame support having a first end and a second end and a top plate attached near said frame first end and a frame base attached near said frame second end; and

 a drill motor having an actuation switch, said motor attached with said top plate; and

 a pneumatic feed cylinder having a pneumatic input port and an extending shaft, said cylinder mounted with said frame base and said extending shaft capable of extending toward said drill motor; and

 an air pressure regulator substantially positioned near said motor having an output port connected with said cylinder input port and an activating lever having a displacement, said regulator supplying a pneumatic pressure from said output port in a pressure value relative to said activating lever displacement and substantially venting said pneumatic pressure when said lever is not displaced; and

 said extending shaft extending toward said drill motor when said activating lever is displaced and supplying a force relative to substantially proportional to said activating lever displacement.

17.(Currently amended) A power assisted drill press comprising:

 a press frame having a frame support having a first end and a second end and a top plate attached near said frame support first end and a frame base attached near said frame support second end; and

 one or more guide rods, each having a first and a second end, said guide rods slidably mounted with said top plate; and

 a motor frame having a drill motor and mounted near said first end of said one or more guide

rods; and

one or more springs slidably mounted between said top plate and said second end of said guide rods to supply retraction force to said motor frame; and

a pneumatic feed cylinder mounted with said top plate and having an extending shaft capable of contacting said motor frame and also having a pneumatic input port; and

an air pressure regulator having an output port connected with said input port of said feed cylinder and a lever capable of supplying a pneumatic pressure to said cylinder having a pressure value substantially proportional relative to the a displacement of said lever, whereby said motor frame and guide rods may be moved toward said frame base with a force substantially proportional to said lever displacement; and

a suction cup having a cup cavity and attached near said second end of said frame support; and

a venturi capable of creating a vacuum, said vacuum of said venturi connected with said cup cavity whereby said suction cup may attach with a surface.

18.(Currently amended) The power assisted drill press as set forth in claim 17 further comprising:

a mating plate within said cup cavity, said mating plate having a mating surface capable of mating with a surface of a work material and positioned to not extend beyond a surface represented by a circumference of said suction cup whereby said mating plate is capable of stabilizing said press frame.

19.(Withdrawn) A method for utilizing a power assisted drill press on a surface, the steps comprising:

forming a power assisted drill press having a drill motor, a bit, and a pneumatic feed cylinder capable of moving said drill motor and bit toward a surface; and

connecting an output of an air pressure regulator with said feed cylinder; and

attaching a suction cup onto said drill press nearest said surface; and

placing a cup cavity of said suction cup onto said surface whereby said suction cup seals onto said surface; and

connecting a venturi with said suction cup, said venturi capable of creating a vacuum within said suction cup cavity; and

activating said venturi whereby said suction cup suctions with and thereby attaches with said surface; and

activating said air pressure regulator substantially proportionally to a desired movement of said bit toward said surface and to a desired force onto said surface; and

activating said drill motor whereby said bit performs work on said surface; and

releasing said activation of said air pressure regulator whereby said cylinder no longer moves said bit toward said surface; and

venting said feed cylinder; and

retracting said bit from said surface; and

deactivating said venturi; and

venting said suction cup; and

removing said drill press from said surface.

20.(Withdrawn) The method for utilizing a power assisted drill press on a surface as set forth in claim 18, the steps further comprising:

forming a mating plate with a mating surface which substantially conforms to said surface and which is of equivalent or less size than said cup cavity; and

placing said mating plate within said cup cavity whereby said mating surface substantially contacts said surface.